

This listing of claims will replace all prior versions of claims in the application.

1. (Currently amended) A method for evaluating myocardial tissue using ^{23}Na or ^{39}K magnetic resonance imaging (MRI), comprising:

a) treating the myocardial tissue with an iron oxide contrast agent so as to attenuate the ^{23}Na or ^{39}K MRI signal for ventricular cavity blood and viable well-perfused tissue; and

b) imaging the tissue with ^{23}Na or ^{39}K magnetic resonance to detect infarcted myocardial tissue and provide contrast between the ventricular cavity and infarcted myocardial tissue;

thereby evaluating myocardial tissue.

2. (Original) The method of claim 1 wherein the tissue is imaged with ^{23}Na MRI.

3. (Original) The method of claim 1 wherein the tissue is imaged with ^{39}K MRI

4. (Cancelled)

5. (Cancelled)

6. (Previously presented) The method of claim 1 further comprising assessing the MRI image to detect infarcted tissue.

7. (Previously presented) The method of claim 1 wherein the contrast agent comprises one or more iron atoms coordinated with a polymer.

8. (Previously presented) The method of claim 1 wherein the contrast agent comprises one or more iron atoms coordinated with a polymer having oxygen substitution.

9. (Previously presented) The method of claim 1 wherein the contrast agent comprises one or more iron atoms coordinated with a polysaccharide.

10. (Previously presented) The method of claim 1 wherein the contrast agent comprises one or more iron atoms coordinated with a dextran.

11. (Previously presented) The method of claim 1 wherein the contrast agent is MION-46.

12. (Previously presented) The method of claim 1 wherein the contrast agent is administered to a subject suffering from or susceptible to myocardial infarction.

13. (Original) The method of claim 12 further comprising selecting a subject suffering or susceptible to myocardial infarction and then administering the contrast agent to the selected subject.

14. (Previously presented) The method of claim 1 wherein the contrast agent is administered to a subject and a magnetic resonance study is made of the subject's heart.

15. (Original) The method of claim 14 wherein the magnetic resonance study differentiates between normal myocardial tissue, injured myocardial tissue and infarcted myocardial tissue.

16. (Currently amended) A method for identifying infarcted myocardial tissue of a subject using ^{23}Na or ^{39}K MRI comprising:

a) administering to the subject an imaging-effective amount of an iron oxide contrast agent so as to minimize signal intensity differences between ventricular cavity blood and well-perfused viable myocardium, maximize signal intensity differences between non-viable myocardium and ventricular cavity blood in myocardial infarction, and maximize signal

intensity differences between non-viable myocardium and well-perfused viable myocardium in myocardial infarction; and

b) imaging the subject's heart with ^{23}Na or ^{39}K magnetic resonance to provide contrast between the ventricular cavity and infarcted myocardial tissue and thereby identify infarcted myocardial tissue;
thereby identifying infarcted myocardial tissue.

17. (Original) The method of claim 16 wherein the subject is suffering from or has suffered cardiac disorder.

18. (Original) The method of claim 16 or 17 wherein the subject is suffering from or has suffered heart failure of cardiogenic shock.

19. (Original) The method of claim 16 or 17 wherein the subject is suffering from or has suffered a cardiovascular disorder.

20. (Previously presented) The method of claim 16 wherein the tissue is imaged with ^{23}Na MRI.

21. (Previously presented) The method of claim 16 wherein the tissue is imaged with ^{39}K MRI.

22. (Previously presented) The method of claim 16 wherein the contrast agent comprises one or more iron atoms coordinated with a polymer.

23. (Previously presented) The method of claim 16 wherein the contrast agent comprises one or more iron atoms coordinated with a polymer having oxygen substitution.

24. (Previously presented) The method of claim 16 wherein the contrast agent comprises one or more iron atoms coordinated with a polysaccharide.

25. (Previously presented) The method of claim 16 wherein the contrast agent comprises one or more iron atoms coordinated with a dextran.

26. (Canceled)

27. (Previously presented) The method of claim 16 wherein the contrast agent is MION-46.

28-36. (Canceled)

37. (Previously presented) The method of claim 1, further comprising, after treating the myocardial tissue with an iron oxide contrast agent, manipulating echo time (TE) so as to assist in identifying infarcted myocardial tissue.

38. (Previously presented) The method of claim 37, further comprising selecting the quantity of contrast agent and echo time so as to minimize signal intensity differences between ventricular cavity blood and well-perfused viable myocardium, maximize signal intensity differences between non-viable myocardium and ventricular cavity blood in myocardial infarction, and maximize signal intensity differences between non-viable myocardium and well-perfused viable myocardium in myocardial infarction.

39. (Previously presented) The method of claim 16, further comprising, after administering to the subject an imaging-effective amount of an iron oxide contrast agent, manipulating echo time (TE) so as to assist in identifying infarcted myocardial tissue.